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National Monitoring Systems for Health Inequalities by Socioeconomic Status – an OECD Snapshot

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Abstract

We assess the extent and quality of High-Income Countries' (HIC) practices in monitoring Socioeconomic Inequalities in Health (SIH) through routine data collection/collation and analysis systems. Official websites of government authorities of eligible countries were examined for any reports containing data on SIH, which were assessed for quality from an epidemiological perspective, using published guidelines for monitoring of socioeconomic inequalities in health status. Despite the global commitment to Sustainable Development Goal 10, and recommendations of the WHO 2008 Commission of Social Determinants of Health, most of the thirty-six HIC whose websites were searched appear not to be routinely monitoring SIHs. Only seven HIC websites were found to have SIH monitoring reports that were readily discoverable on their official websites. Only two countries (England and Scotland) have been publishing such trends in detail for more than a half-decade. Although an SIH monitoring system is not itself a sufficient condition for reducing SIH, it is likely a necessary one. For countries that are planning to establish a system, lessons from others who have established such systems include the value of routinely and automatically post-coding of major health outcomes, with robust assignment of average socio-economic status to each local area.

Introduction

As early as 1839, William Farr, a founder of medical statistics, pointed out the importance of data collection by levels of socioeconomic status (SES), after he observed a systematic variation in the risk of death in different population sub-groups, categorised by the *‘influence of civilisation, occupation, locality, seasons and other physical agencies’* (Whitehead, 2000, p.86 – emphasis as in original). Nearly two hundred years later, living conditions have improved markedly in High Income Countries (HIC), and life expectancy has increased greatly. However, profound socioeconomic inequalities persist in many countries, and are among the factors contributing to sub-optimal population health status (Wilkinson & Pickett, 2009; Raleigh, 2018). The downward economic trajectories of many modern welfare states, through and after the 2008 global economic crisis -- now followed by the COVID-19 pandemic -- have generally exacerbated previous inequalities in health by socio-economic status (SES) (Bleich et al., 2012, Raleigh, 2018, Anderson et al., 2020). It is therefore more critical than ever to monitor these inequalities, especially to meet Sustainable Development Goal #10: ‘Reduce inequalities within and among countries’ (CSDH, 2008; UNGA, 2015).

Many HIC have recognised the importance of health inequalities, and many are equipped with sophisticated health information systems which could readily be deployed to monitor socioeconomic inequalities in health (SIH). Such empirical evidence, and active discussions of that evidence in civil society, help put SIHs firmly ‘on the table of public discourse, as key to holding governments accountable for addressing SIHs’ (Whitehead, 1998, pp.484-486). It follows that the absence of reliable data to monitor SIHs over time disadvantages any society that is serious about reducing health inequalities.

However, despite the presence of a sophisticated SIH monitoring system for over a decade in England and Scotland, the disparities between the most deprived and the least deprived sub-populations have remained largely undiminished since monitoring began in these countries, and some inequalities keep widening (Arcaya et al., 2015; Bambra, 2016; McCartney et al 2011, 2017). It follows that the technical ability and political will to analyse and publish data on SIH does not necessarily lead to effective policies being pursued to *reduce* such inequalities (Marmot & Goldblatt, 2013; Schofield et al., 2016). Information alone is never sufficient, in and of itself, to address a public policy challenge (Arcaya et al., 2015). However, without evidence from robust national SIH monitoring systems, we believe the major policy changes required to shift the underlying drivers of SIH are unlikely to occur, and if they do occur, they are likely to remain unevaluated for their effectiveness.

In this paper, we use the term ‘inequalities’ in referring to the target of national monitoring systems to comply with SDG #10, rather than ‘inequities.’ There is a long tradition of using ‘inequalities’ when referring to measurement and monitoring – for example, in conjunction with the widely used phrase ‘an indicator of social progress and the quality of development’ (Whitehead & Dahlgren, 1991, p.1062). However, we sympathise with others that the fundamental purpose of doing such measurement and monitoring is to better understand and act on the underlying structural and root causes of inequities, as *unfair* gaps between the health of populations with different levels of power and influence. This usage is in keeping with a widely used distinction: health inequality is measurable, while inequity implies a moral judgment about an unfair difference (Arcaya et al., 2015, p.2).

Aim

The aim of this study is to investigate the extent to which national HIC governments currently (July 2020) have a functional SIH measurement/monitoring system that provides regular information and is readily discoverable on the internet.

Methods

This study is an environmental scan. Data collection was conducted exclusively through official websites of Government authorities (e.g. Ministries of Health, national statistical agencies, and national public health agencies). The main search engine utilised was Google. The authors spent up to three hours examining each eligible countries' relevant websites, to identify any national report/database on health inequalities by socioeconomic status (SES), published since 2010. If government websites mentioned any health inequalities measurement activities, we allocated additional time for further web searching to find these SIH reports.

Country selection: To restrict the levels of socioeconomic development examined, thirty-six high-income OECD (Organisation for Economic Co-operation and Development) countries were considered in this study. The United Kingdom, England, Northern Ireland, Scotland, and Wales were considered as independent jurisdictions because of the progressive devolution of their health systems' governance for the last two decades. In cases where a government had commissioned SIH monitoring by a research institute, that country was included if the government had set up a monitoring system based on the commissioned recommendations. We searched websites intensively for evidence of routine monitoring systems for SIHs of the thirty-six countries. See Supplementary Material: Table 1 (List of country websites found and not found to have SIH reports); Table 2 (Summary of Findings); and Table #3 (List of all national websites examined).

Study Limitations: The authors did not conduct any direct interviews with each country's relevant authorities for data collection. Therefore, there might be information overlooked, that does not appear on official websites. However, we submit that information on SIHs that cannot be found by skilled searching of a country's official national websites, for at least three hours, is unlikely to contribute to either public discourse or related policy making. We limited the search scope to websites in English and French. Some websites, of countries whose official languages are not these languages, are only partially translated into English, limiting authors' access to some information.

Method of analysis: The authors analysed the findings using published Critical Appraisal criteria (Frank & Haw, 2011) for assessing the quality of reports monitoring socioeconomic inequalities in health over time.

Results

A national routine monitoring system, aiming at producing regular reports on SIH, has been established in only seven of the thirty-six countries examined: all four UK devolved jurisdictions, Belgium, Canada and Norway (Table 2). However, in two of these countries

(Belgium and Norway), data sources related to SIH seem to have depended entirely on periodic health surveys, so that only self-reported health outcomes have been presented in their SIH reports. Canada did not publish its first comprehensive national report on SIH until 2018 --- a baseline report, to establish a national monitoring system for SIH by linking vital statistics (mortality) data to key health outcomes across local areas, rank-ordered by survey- and- census-based measures of SES [Government of Canada/Public Health Agency of Canada (PHAC), 2018, p.19 – Table 3]. Scotland uses similar record linkage, based on machine-readable postcodes of residence for all births, deaths and hospitalisations, across a national grid of nearly 7000 small “data-zones”, for each of which an average value of an income-unemployment sub-scale, of the Scottish Index of Multiple Deprivation (SIMD), is regularly updated from censuses and surveys (Government of Scotland, 2018 – Table 3). Scotland has been reporting annually on the long-term monitoring of health inequalities since 2007, longer than any other nation we could identify. England has been monitoring SIHs, using virtually identical methods, since 2013 (Public Health England, 2020 – Table 3).

After more than a decade of global economic crisis, most modern welfare states appear, based on our web search, to have become more aware of SIHs – at least at the level of general policy intentions. However, only a handful of countries seem to have taken concrete action to measure SIH regularly and monitor their trends over time. Only two countries (England and Scotland) have been equipped with such a monitoring system long enough to provide meaningful time-trends in SIH over more than a half-decade. As well, the authors wonder if the public is being properly informed about their nations’ SIH through these internet reports. Some of the reports we found, across the seven countries, seem overly technical for public communication – see ‘Critical Appraisal’ findings below.

Critical Appraisal Criteria #1: Choice of health outcome indicators: are they without ambiguity?

The most common health outcome used in SIH measurement, among all the web documents we found and examined, is life expectancy, an unambiguous summary measure of all current age-specific mortality rates. A related measure, healthy life expectancy (HLE), is often used as an indicator of overall health, because it integrates all-cause premature mortality, based on mortality data from vital statistics registration systems, and self-assessed health status from surveys. England and Scotland also monitor cause-specific mortality due to cardiovascular disease (CVD) and ‘cancer’ -- i.e. all types of cancers combined, which can be misleading due to the extreme biological heterogeneity of causation and treatment across cancer sites (Frank & Haw, 2011). Scotland also monitors coronary heart disease hospitalisations and mortality, as well as the incidence of all cancers combined, as well as alcohol-related hospitalisations and mortality. Canada has mapped out an explicit process of indicator selection, featuring criteria used to select the most important public health outcomes, transformed into twenty-two key indicators, out of over seventy indicators considered (Government of Canada/PHAC, 2018, p.34 – Table 3). The Canadian baseline report on national SIH also analysed specific diseases’ prevalence -- arthritis, asthma, diabetes, oral health, etc. --using individual-level SES data. However these prevalence data are entirely based on self-reports in national surveys – a methodology with considerable limitations for common conditions that may often be asymptomatic and not systematically screened for in primary care (e.g. type II diabetes), or not readily understandable to survey respondents (e.g.

‘coronary heart disease’). Still, Canada’s exemplary process for health outcome selection, unique among all the countries with SIH reports, is a model for other countries.

Critical Appraisal Criteria #2: Choice of SES variable(s) – are they epidemiologically and statistically appropriate?

All four devolved jurisdictions of the UK have adopted a similar (but not identical) Index of Multiple Deprivation (IMD) for reporting SIH. As noted above, these indices are updated regularly for each of thousands of local ‘data-zones’ in each jurisdiction, using local data from the census, and various surveys (e.g. of unemployment). However, ‘*all measures of inequality are imperfect summaries.*’ (McCartney et al., 2013, p.188) Technical guidance attached to the Scottish reports on health inequalities states the limitations of linking records of health and SES at the individual level; it justifies the use of SIMD – an ecological/small-area-average measure, based on income and employment data as a ‘*preferred interim approach*’ (Government of Scotland, 2018, p.52 – Table 3). The IMD has been criticised for its potential for ‘reification’, through ecological fallacy – mistaken inferences about individuals through analysis of their data at the group level -- that may mask causal issues at the individual level, a risk which is all the more real due to the ‘*apparent simplicity of the measure*’ (Clelland & Hill, 2019). The 2018 Scottish report explains in detail the statistical approach used to transform the source data into an income-employment deprivation sub-index for each small geographic zone, for use in annual SIH monitoring since 2007 (Government of Scotland, 2018 – Table 3). Wales justifies the IMD as a proxy for SES, due to the ‘*absence of suitable individual-level socioeconomic data*’ (Public Health Wales Observatory, 2017, p.1 – Table 3). Canada adopted a comprehensive approach to measuring socio-economic stratification, in that the baseline analysis considers other social variables (Government of Canada/PHAC, 2018 – Table 3). Norway and Belgium use individual education level as the key SES variable (see Table 1), leading to two problems. First, this tends to restrict the health outcomes examined to those self-reported on national surveys. Secondly, older generations grew up in an era when levels of education attained were generally much lower than in recent birth cohorts (Smith & Frank, 2005). Hence, education can be an inconsistent indicator of SES over long periods of time, across different birth cohorts.

Critical Appraisal Criteria 3: a) Are the methods of data analysis and depiction statistically appropriate? b) Are the results presented understandable to non-technical audiences?

The use of statistical summary measures of SIH varies by country. All countries that report SIH issue technical notes, providing summary measures’ definitions. England, Northern Ireland, Scotland, and Wales use both Slope Index of Inequality (SII) and Relative Index of Inequality (RII), which robustly measure absolute and relative inequality respectively, across the entire SES distribution (Frank & Haw, 2011). They also present ‘absolute gap’ (e.g. magnitude of the arithmetic difference between the most versus the least deprived groups’ health outcomes – typically extreme deciles’ event-rates). [Notably, the assumption of linearity in the relationship between the chosen measure of SES, and the health outcome being analysed, is a pre-requisite for validly utilising SII and RII, because both indices are derived from *linear* weighted-regression methods. Unfortunately, some national SIH reports do not appear to formally test this linearity assumption statistically (Frank & Haw, 2011).] England and Scotland, and Wales in particular, have developed a clear and simple ‘technical

guide’ and visual infographics (Public Health Wales Observatory, 2017 – Table 3). Such visual aids are powerful tools to explain magnitude of health inequalities to policymakers as well as the general public.

Discussion

Two major challenges seem to be blocking many HICs from developing monitoring systems for SIHs.

1. Inadequate data linkage capacity and complete delegation to sub-national authorities.

Most HICs collect SES and health data from diverse administrative records (e.g. vital registration systems, cancer registries, hospital admission databases), as well as the census, and bespoke surveys. However, such fragmentation of data sources can be a challenge when linking SES and health data across different sub-national/ regional authorities. It was found that some countries, such as Belgium and Norway, have decentralised SIH measurement to the municipal/local level. Such initiatives presumably hope to thereby empower these communities to reduce health inequalities. In Belgium, for example, such information is available but registered in different databases, collected and stewarded by different public sector institutions; apparently Belgium finds it challenging to record-link at the national level, given current data protection and privacy regulations (Belgium Official Information and Services/For a Healthy Belgium, 2019 – Table 3). On the other hand, Canada -- also a federal state composed of the thirteen provinces and territories, each of which operates its own independent healthcare system -- is successful in consistently linking existing data sources across these provinces and territories, allowing website presentation of integrated, national-level SIH data for several health outcomes (Government of Canada/PHAC, 2018 – Table 3). It is difficult to assess the pros and cons of these decentralisation initiatives without detailed knowledge of the capability of local governments to actually ‘pull the policy levers’ on some of the most potent policy-determinants of SES gradients. We believe, however, that the complete delegation to local government of all responsibility for both monitoring and tackling SIHs may blur the accountability for SIHs of national-level policymakers, especially with respect to redistributive social welfare and taxation policies known to be powerful levers for reducing SIH.

Lack of political will

Nurturing ‘data cultures’ through which governments become familiar with SIH data -- in order to make good policy-use of such data, including communicating the data publicly -- requires strong political will to drive it. Currently, governments of the majority of HIC we studied seem surprisingly reluctant to collate, analyse and present SIH data on their official websites, despite their increasing awareness of SIH. This situation may be partly due to recent austerity measures that affect their already stretched public sector budgets (McCartney et al., 2017). Measuring and analysing SIH reliably require a whole-government approach, independent of political and ideological influence. And, to achieve changes in SIH, the government must have the will to find effective action strategies and policy solutions beyond data collection. Finally, governments need to face up to widespread evidence that most health inequalities have not been reduced over many years of stated policy intentions to do so, as in Scotland, (McCartney et al., 2011, 2017) -- and to the need to transparently review the potential causes of such policy failures, in order to come up with alternative strategies.

To comply with SDG#10, national governments enacting policies to reduce health inequalities require monitoring systems for the robust and regular measurement of SIH. If such data are not available, we believe that national governments cannot achieve a better understanding of the causal pathways between socioeconomic position and health outcomes and are unlikely to enact effective policies for reducing inequalities (Arcaya et al., 2015). Based on careful interpretation of such SIH data, properly analysed and clearly presented, corrective public policies can be pursued, acting upon the structural determinants of SIHs amenable to policy action, typically through more redistributive taxation and social welfare initiatives. SIH monitoring systems can thus be powerful catalysts to governments' actions on health equity. Building robust SIH monitoring systems does require extra initial investment. However, once established, such systems – especially those based, as in the UK, on record-linkage across existing datasets, utilising small-area-average indices of socioeconomic position -- typically serve for many years, at relatively low recurrent cost, as an excellent source of evidence for equitably improving the population's health.

Conclusion

To our knowledge, this is the first published study to review international monitoring systems for health inequalities by socioeconomic status, by examining official and widely accessible web-sources – in this case for thirty-six wealthy OECD countries. Our main finding is that only seven of the thirty-six OECD HIC, including all four UK devolved jurisdictions, have clearly established a SIH monitoring system and published web reports on SIH magnitudes and trends. Of these seven, only two (England and Scotland) have done this for at least a half-decade – although this may soon also be the case for Wales and Northern Ireland, since their SIH monitoring systems are clearly now established. This “rhetoric-implementation gap” flies in the face of the obvious fact that successfully reducing health inequalities – as committed to by more than 190 signatories to the SDGs – requires sound data collection and analysis systems for measuring SIHs and tracking them over time.

SIH monitoring tends to be highly quantified, increasingly using relatively complex statistical techniques for analysis. There are few qualitative reports on such monitoring (Pedrana et al., 2016). We believe it would be useful to explore alternative and more lay-friendly approaches to document SIHs and their underlying causes, in a narrative way. We suspect that using such approaches would elicit more public participation in the policy discourse about health inequalities and related inequities, and hopefully thereby contribute to enhanced policy action to reduce them.

Finally, the COVID-19 pandemic hit all these countries after this research project was completed, although recent emerging evidence suggests that it has increased SIHs globally (Anderson et al., 2020). Unfortunately, only a handful of countries appear to have the SIH surveillance systems in place to detect potentially pernicious inequity effects of the pandemic. Perhaps COVID-19 therefore presents a golden opportunity and urgent rationale for building such surveillance systems, thereby putting routine monitoring of SIHs at the heart of the national health governance.

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Supplementary Material

Table 1. Status of thirty-six OECD member states' SIH measurement/monitoring systems

Country	Availability of definition of ' <i>health inequalities</i> ' and/or ' <i>health inequities</i> ' on official website	Report on SIHs retrievable on official website	Health inequalities measurement system in place
Australia	+	-	-
Austria	+	-	-
Belgium	+	+	+
Canada	+	+	+
Czechia	+	-	-
Chile	-	-	-
Estonia	-	-	-
Denmark	-	-	-
Finland	+	?	?
France	+	?	-
Germany	+	+	-
Greece	-	-	-
Hungary	-	-	-
Iceland	-	-	-
Ireland	+	+	-
Israel	+	+	-
Italy	?	-	-
Japan	+	-	-
Korea	?	?	?
Latvia	-	-	-
Lithuania	+	?	-
Luxembourg	-	-	-
Mexico	+	+	?
Netherlands	+	-	?
New Zealand	+	-	-
Norway	+	+	+
Poland	-	-	-
Portugal	+	-	-
Slovakia	-	-	-
Slovenia	+	+	-
Spain	-	-	-
Sweden	+	-	-
Switzerland	+	-	-

Turkey	-	-	-
United Kingdom	+	+	+
England	+	+	+
N.Ireland	+	+	+
Scotland	+	+	+
Wales	+	+	+
United States	+	?	?

Legend:

+ (Yes)	- (No)	? (Unclear)
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Sources: see Web Appendix 1 for list of country websites examined.

Note: Websites without English translation, and websites in languages other than English and French are excluded.

[For full list of OECD member-countries, see: <https://www.oecd.org/about/members-and-partners/>]

Supplementary Material

Table 2: Key findings for the seven countries with SIH reports discoverable on their official websites

Country	Number of key health outcome indicators	Summary measure of life expectancy*	Key socioeconomic status indicator(s)	Key feature	Reference (Publisher)
Belgium	30 (approx.)	Trends in estimates over years 2000-2017	Area-based (Region); Education level	<ul style="list-style-type: none"> • Baseline report to recommend a regular SIH monitoring. • Report commissioned by the Ministry of public health to external experts. 	Health Status Report 2019 (SCIENSANO)
Canada	22	Estimate difference (years and %)	~ 11 variables (income, education, occupation, immigrant status, etc.)	<ul style="list-style-type: none"> • Baseline report to set up a national monitoring system. • Presentation of the selection process of key indicators along with selection criteria. 	Key Health Inequalities in Canada 2018 (PHAC)
Norway	34	Trends in estimates over years 1973-2017	Area-based (municipality); Education level;	<ul style="list-style-type: none"> • A single database 'municipal statistic bank' is in place. • Education level is defined as SES for the Norway context. • Selected indicators of social inequalities in health by educational attainment have been monitored since 1990 (latest: 2016). 	Public Health Profiles 2019 (NIPH)
England	56	Slope Index of Inequality (SII in years) 2016-2018	Area-based (IMD)	<ul style="list-style-type: none"> • Comprehensive and detailed (abundant) information using appropriate statistical methods and online 	Public Health Outcomes Framework (PHE)

				<p>visualisation tools (webtools).</p> <ul style="list-style-type: none">• Using eight National Statistics Socio-economic classification (NS-SEC) and seven levels of education.	
N.Ireland	49	Estimate difference (years) 2011-2017	Area-based (IMD)	<ul style="list-style-type: none">• Longitudinal assessment of health inequality gaps between socioeconomic groups has been in place in NI since 2003.• 'Health & Social care inequalities monitoring system' is in place.	Health Inequalities Annual report 2019 (NI IAD, DoH)
Scotland	13	SII, Relative Index of Inequality, absolute gap 2009-2016 (2017 report)	Area-based (IMD)	<ul style="list-style-type: none">• Prioritised key outcome indicators.• The annual monitoring reports persisting inequalities in the overall indicators, except healthy birth weight.	Long-term monitoring of health inequalities 2018 (GoS)
Wales	8	SII (years) 2005-09 & 2010-2014	Area-based (IMD)	<ul style="list-style-type: none">• Technical guidance explains in plain words how to read the report.• Confidence Intervals reported for sampling error (random variation) of reported summary measures of SIHs.	Measuring inequalities 2016 (PHW)

				<ul style="list-style-type: none">• Geographical deprivation is mapped and presented in the report.	
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**Life expectancy has been used as a headline indicator of SIH by eligible countries.*

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Supplementary Material
Table 3: List of websites examined

Australia

The Department of Health, Australian Government (2006)
Health Inequalities Research Collaboration (HIRC)
<https://www.health.gov.au/internet/main/publishing.nsf/Content/hirc-index.htm>

The Department of Health, Australian Government (2009)
Social Determinants of Health / Development of a new national women’s health policy
consultation discussion paper 2009
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/38FF434F5AE683E3CA257BF0001E72E7/\\$File/cons-dis-paper2009-no-graphics.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/38FF434F5AE683E3CA257BF0001E72E7/$File/cons-dis-paper2009-no-graphics.pdf)

Australian Institute of Health and Welfare (AIHW)
<https://www.aihw.gov.au>

AIHW (2018) ‘Australia’s Health 2018’ report
<https://www.aihw.gov.au/getmedia/7c42913d-295f-4bc9-9c24-4e44eff4a04a/aihw-aus-221.pdf.aspx?inline=true>

AIHW (2019) ‘Indicators of socioeconomic inequalities in cardiovascular disease, diabetes and chronic kidney disease’ report
<https://www.aihw.gov.au/reports/chronic-disease/indicators-of-socioeconomic-inequalities-in-cardio/contents/table-of-contents>

Austria

Federal Ministry of Labour, Social Affairs, Health and Consumer Protection
<https://gesundheitsziele-oesterreich.at/english-summary/>

Federal Ministry of Health and Women’s Affairs (2017) Health Targets for Austria (revised version 2017, original version 2012)
<https://gesundheitsziele-oesterreich.at/website2017/wp-content/uploads/2017/05/health-targets-austria.pdf>

Austrian Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (2019) ‘Austrian Health Targets’
<https://gesundheitsziele-oesterreich.at/english-summary/>

Belgium

Belgium Institute for Health (SCIENSANO) (2019) Belgium Health Status Report 2019 (L’Etat de Santé en Belgique: available in Dutch and French). February 2019.
https://www.healthybelgium.be/images/hsr/HSRReport2019_FR.pdf

Belgium Official Information and Services/For a Healthy Belgium (2019) Equity and Inequities. Update 25 April 2019
<https://www.healthybelgium.be/en/health-system-performance-assessment/equity-and-inequalities>

OECD (2016) OECD Health Policy Overview - Health Policy in Belgium
<http://www.oecd.org/belgium/Health-Policy-in-Belgium-February-2016.pdf>

Canada

Government of Canada/Public Health Agency of Canada (2018) Key Health Inequalities in Canada- A National Portrait.
<https://www.canada.ca/en/public-health/services/publications/science-research-data/key-health-inequalities-canada-national-portrait-executive-summary.html>

Government of Canada/Public Health Agency of Canada (2018) Health Inequalities Data Tools. <https://health-infobase.canada.ca/health-inequalities/data-tool/index>

Government of Canada/Public Health Agency of Canada (2018) Pan-Canadian Health Inequalities Reporting Initiative Summary Measures.
<https://health-infobase.canada.ca/health-inequalities/docs/pan-canadian-health-inequalities-en.pdf>

Denmark

Danish Ministry of Health
<http://www.sum.dk/English.aspx>

The University of Copenhagen (2011) 'Ulighed i sundhed – årsager og indsatser' ('Inequalities in health – Causes and efforts': Available in Danish).
<https://www.sst.dk/~media/F674C77308FB4B0CA00EB038F17E239B.ashx>

Finland

Ministry of Social Affairs and Health
<https://stm.fi/en/frontpage>

Ministry of Social Affairs and Health (2008) The National Action Plan to reduce health inequalities. Ministry of Social Affairs and Health Publication. (From the website Institutional Repository for the Government of Finland)
<http://julkaisut.valtioneuvosto.fi/handle/10024/71185>

Ministry of Social Affairs and Health (2010) Social Sustainable Finland 2020: Strategy for social and health policy. (From the website Institutional Repository for the Government of Finland)
<https://julkaisut.valtioneuvosto.fi/handle/10024/74057>

Statistics Finland
https://www.tilastokeskus.fi/index_en.html

Palosuo, H., Koskinen, S., Lahelma, E., Kostiaainen, E., Prättälä, R., Martelin, T., Ostamo, A., Keskimäki, I., Sihto, M. & Linnanmäki, E. (Eds.) (2009).
Health Inequalities in Finland: Trends in socioeconomic health differences 1980- 2005.
Ministry of Social Affairs and Health.
<http://julkaisut.valtioneuvosto.fi/handle/10024/72254>

France

Fédération nationale des observatoires régionaux de santé (FNORS) (Independent observatory of health status by region in France).
<https://www.fnors.org/>

DREES/ Santé Publique France (2017) Annual report 'L'Etat de Santé de la Population en France - Rapport 2017' (Health status of French population – Report 2017).
<https://drees.solidarites-sante.gouv.fr/IMG/pdf/esp2017.pdf>

Directorate of Research, Surveys, Evaluation and Statistics (DREES) Ministry of Solidarity and Health (Direction de la Recherche, des Etudes, de l'Evaluation et des Statistiques, Ministère des Solidarités et de la Santé) (2019)
<https://drees.solidarites-sante.gouv.fr/etudes-et-statistiques/>

Chile

Ministry of Health of Chile
<https://www.gob.cl/en/ministries/ministry-of-health/>
<https://www.minsal.cl>

Czechia

Ministry of Health of the Czech Republic
<https://www.mzcr.cz/category/ministerstvo-zdravotnictvi/statni-sluzba/>

Health 2020: National Strategy for Health Protection and Promotion and Disease Prevention
<http://www.zdravi-2020.cz/dokumenty/health-2020-national-strategy.pdf>

England

Public Health England (2020) Public Health Outcomes Framework. Updated 05 May 2020.
<https://www.gov.uk/government/collections/public-health-outcomes-framework>

Public Health England (2020) Official statistics: Health Inequalities Dashboard: statistical commentary, March 2020. Published: 03 March 2020.
<https://www.gov.uk/government/publications/health-inequalities-dashboard-march-2020-data-update/health-inequalities-dashboard-statistical-commentary-march-2020>

Public Health England (2020) Inequality Tools. Updated January 2020.
<https://fingertips.phe.org.uk/profile/inequality-tools>

Public Health England (2020) Health Equity dashboard: Technical Guidance.
<https://fingertips.phe.org.uk/profile/guidance>

Estonia

Ministry of Health and Labour

<https://www.sm.ee/en/minister-health-and-labour-jevgeni-ossinovski>

Germany

Federal Ministry of Health

<https://www.bundesgesundheitsministerium.de/en/en.html>

Robert Koch Institute

https://www.rki.de/DE/Home/homepage_node.html

Lampert, T., Kroll, L. E., Kuntz, B. & Hoebel, J. (2018). Health inequalities in Germany and in international comparison: trends and developments over time. (Federal Health Reporting) *Journal of Health Monitoring* 3(S1).

<https://doi.org/10.17886/RKI-GBE-2018-036>

Greece

Ministry of Health and Social Solidarity

http://www.ermis.gov.gr/portal/page/portal/ermis/publicBodies?p_topic=8500

Hungary

Ministry of Health

<http://www.eum.hu/main.php>

Iceland

Ministry of Health

<https://www.government.is/ministries/ministry-of-health/>

Ireland

The Government of Ireland/ Department of Health (2019) Healthy Ireland Policies (last update April 2019). <https://www.gov.ie/en/policy-information/706608-healthy-ireland-policies/>

The Government of Ireland/ Department of Health (2019) Healthy Ireland - A Framework for Improved Health and Wellbeing 2013-2025.

<https://assets.gov.ie/7555/62842eef4b13413494b13340fff9077d.pdf>

Central Statistics Office (2019) Irish Health Survey.

<https://www.cso.ie/en/methods/health/irishhealthsurveyihs/>

Israel

Ministry of Health

<https://www.health.gov.il/English/Pages/HomePage.aspx>

Italy

Ministry of Health (Ministro della Salute)

http://www.salute.gov.it/portale/p5_11.jsp

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Italian Public Health Institute (Istituto Superiore di Sanita)
<https://www.iss.it>

Japan

Ministry of Health, Labour and Welfare (MOHLW)
<https://www.mhlw.go.jp/english/>

MOHLW (2019) Annual Report 2018 (Kousei hakusyo – White Paper 2018)
<https://www.mhlw.go.jp/wp/hakusyo/kousei/18/dl/all.pdf>

Latvia

Ministry of Health
<https://www.vm.gov.lv/en/>

Lithuania

Ministry of Health
<https://sam.lrv.lt/en/>

Luxembourg

Ministry of Health
<https://msan.gouvernement.lu/en.html>

Mexico

Ministry of Health
<https://www.gob.mx/salud/en>

The Netherlands

Government of Netherlands: Ministry of Health, Welfare and Sport
<https://www.Government.nl/ministries/ministry-of-health-welfare-and-sport>

GEZOND IN... (Web portal of information and good examples about the local approach to health inequalities in Netherlands) [Available only in Dutch].

Available from: <https://www.gezondin.nu>

PHAROS (Dutch Centre of Expertise on Health Disparities).

Available from: <https://www.pharos.nl/english/>

New Zealand

Ministry of Health
<https://www.health.govt.nz>

Ministry of Health (2002) Reducing Health Inequalities.
<https://www.health.govt.nz/system/files/documents/publications/reducineqal.pdf>

Ministry of Health (2016) New Zealand Health Strategy 2016-2026.
<https://www.health.govt.nz/system/files/documents/publications/new-zealand-health-strategy-roadmapofactions-2016-apr16.pdf>

University of Otago – Wellington (2020) Health Inequalities Research Programme (HIRP),
Department of Public Health.
<https://www.otago.ac.nz/wellington/departments/publichealth/research/hirp/index.html>

Northern Ireland

Department of Health (2019) Health Inequalities Annual report 2019.
<https://www.health-ni.gov.uk/publications/health-inequalities-annual-report-2019>

Department of Health (2019) Health Inequalities Statistics.
<https://www.health-ni.gov.uk/articles/health-inequalities-statistics>

Norway

Norwegian Institute of Public Health (2016) Social inequalities in health.
Updated 15 October 2018. <https://www.fhi.no/en/op/hin/groups/social-inequalities/>

Norwegian Institute of Public Health (2014) Public health profiles - a summary of health data
for each municipality and county. Updated 01 March 2019.
<https://www.fhi.no/en/hn/health-in-the-municipalities/public-health-profiles-for-municipa/>

NORHEALTH (Databank of the Norwegian Institute of Public Health)
<http://norgeshelsa.no/norgeshelsa/?language=en>

Poland

Ministry of Health
<http://www.archiwum.mz.gov.pl/en/>

Portugal

Directorate-General of Health (Government of Portugal).
<https://www.dgs.pt/directorate-general-of-health/about-us.aspx>

Portuguese Healthy Cities Network (Rede Portuguesa Municipio Saudaveis) (2015).
<http://redemunicipiossaudaveis.com/index.php/en>

Scotland

Government of Scotland (2018) Long-term monitoring of health inequalities: December
2018 report. 11 December 2018. ISBN 9781787814424.
<https://www.gov.scot/publications/long-term-monitoring-health-inequalities-december-2018-report/>

Slovakia

Public Health Authority of the Slovak Republic
<http://www.uvzsr.sk/en/>

Slovenia

National Institute of Public Health
<https://www.nijz.si/en>

South Korea

Ministry of Welfare and Health (MOWH).

Available from: <http://www.mohw.go.kr/eng/index.jsp>

Korea Institute for Health and Social Affairs

<http://www.kihasa.re.kr>

Spain

Ministry of Health, Consumer affairs and Social Welfare (MOH) (Ministerio de Sanidad, Consumo y Bienestar Social)

<https://www.mscbs.gob.es/en/home.htm>

MOH: Equity/Health Policies (Equidad/ Políticas de Salud)

<http://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/e01.htm>

Sweden

Ministry of Health and Social Affairs

<https://www.government.se/government-of-sweden/ministry-of-health-and-social-affairs/>

Public Health Agency of Sweden

<https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/>

Switzerland

Federal Office of Public Health (FOPH)

<https://www.bag.admin.ch/bag/en/home.html>

FOPH (2018) Health equity: Facts and figures for Switzerland.

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-chancengleichheit.html>

Turkey

Ministry of Health

https://www.saglik.gov.tr/?_Dil=2

United States

Office of Disease Prevention and Health Promotion: Healthy People.gov

<https://www.healthypeople.gov>

<https://www.healthypeople.gov/2020/data-search/>

Center for Disease Control and Prevention (CDC): CDC Health Disparities & Inequalities Report (CHDIR)

https://www.cdc.gov/minorityhealth/CHDIRReport.html#anchor_1547838233

Center for Disease Control and Prevention (CDC): Strategies for Reducing Health Disparities

<https://www.cdc.gov/minorityhealth/strategies2016/index.html>

Wales

NHS Wales: Health in Wales

<http://www.wales.nhs.uk/>

Public Health Wales Observatory. Inequalities and inequities.

<http://www.publichealthwalesobservatory.wales.nhs.uk/inequalities-and-inequities/>

Public Health Wales Observatory (2016) Measuring inequalities: Technical Guide.

[http://www2.nphs.wales.nhs.uk:8080/PubHObservatoryProjDocs.nsf/85c50756737f79ac80256f2700534ea3/297792ca5a14123080257ff60051cab6/\\$FILE/MeasuringInequalities2016TechnicalGuide_InternalRelease_v1.pdf](http://www2.nphs.wales.nhs.uk:8080/PubHObservatoryProjDocs.nsf/85c50756737f79ac80256f2700534ea3/297792ca5a14123080257ff60051cab6/$FILE/MeasuringInequalities2016TechnicalGuide_InternalRelease_v1.pdf)

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